LSW Engineers
ARIZONA, INCORPORATED

January 28, 2013

Kennedy Partners
5415 East High Street, Suite 410
Phoenix, AZ 85054

Attn: Mark Rafferty
(mrafferty@kennedyprtnrs.com)

Re: Balsz School District #31
Facility Assessments
LSW Project No. 2013-010.000

Mark,

It was a pleasure working with your team on the subject project. On Friday & Saturday, January 11 & 12, 2013, and Wednesday, January 16, 2013, we visited the subject schools accompanied by Mr. Sean Mulvanny from your office.

We met with Mr. Doyel Chancey; Supervisor Maintenance & Transportation, and we were accompanied on our walkthroughs by Mr. Darrell James; HVAC Manager.

Attached are the Mechanical and Plumbing Assessments. As will be detailed later herein, we could be available to further assist the Owner with resolution of certain ongoing work, primarily the replacement HVAC Control System.

During our walkthroughs, we observed some potential code issues, and some other eminent concerns, and we feel compelled to document them.

PRIORITY NEEDS

<u>District Maintenance and Transportation Center</u>

1. There does not appear to be a sand and oil interceptor for the drainage from the bus maintenance bays. It has been our experience that a sand and oil interceptor is required for this type of facility.

<u>Brunson-Lee School</u>

2. The kitchen hood exhaust fan is operational. However, the make-up air heating and cooling is not operational.

3. Central Plant - The refrigerant leak detection and emergency ventilation system control does not appear to be operational.

4. Roofs - It appears the original black steel natural gas piping was not painted or otherwise protected, and it appears significant rusting/deterioration has occurred. We recommend that this piping be properly tested to determine its condition.

Orangedale School

5. The kitchen hood exhaust fan does not appear to be operational, including the make-up air heating and cooling.

6. Central Plant - The refrigerant leak detection and emergency ventilation system control does not appear to be operational

7. At several randomly selected locations, the hand wash stations in Student Restrooms were not operational.

David Crockett School

8. The kitchen hood exhaust fan operates with only manual control and only at low speed. The make-up air heating and cooling does not appear to be operational.

9. The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement, but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.

Griffith School

10. The kitchen hood exhaust fan operates with only manual control and only at low speed. The make-up air heating and cooling does not appear to be operational.

11. The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.

Balsz School

12. Central Plant - One of the refrigerant leak detection system controls does not appear to be operational.

13. The kitchen hood exhaust fan does not appear to be operational, including the make-up air heating and cooling.

14. The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.

GENERAL

15. At the end of the individual school assessments, we have included a GENERAL ASSESSENTS to include General, and Overall District recommendations.

BACKGROUND

16. The School District's maintenance for the past 5-6 years, was the responsibility of a contract maintenance organization, which reportedly did not serve the Districts needs and the contract was recently terminated.

The School District is working diligently to recover and correct past practices. Most notable was the lack of hydroninc piping systems water treatment. The District has retained a reputable Water Treatment Agency, conducted extensive system cleaning and flushing, has replaced some piping, and is implementing a comprehensive water treatment program. At the Orangedale and Griffith School Central Plant, we did observed the closed system pot feeders to be out of service, and needing replacement.

Second were the delayed filter replacement and the subsequent damage to coils. Reportedly, the coil cleaning is well underway and it is estimated to be 20% completed.

Last, during this same time period, preventive maintenance was not performed. However, reportedly a formal Preventive Maintenance Program is now being implemented.

17. The School District has recently entered into a Multi-Phase Performance Contract with a local Mechanical Contractor.

In some regard, this Contract will assist the District by improving their mechanical equipment operation, extending the useful life of some equipment/system and providing specialized maintenance service.

In particular, the Chiller Maintenance Scope is well advised.

In another matter, installation of a Plate & Frame Heat Exchangers at the Balsz and Orangedale sites has merit as well as replacement chillers at the David Crockett and Griffith Schools.

18. Each school in the District had an existing ALLERTON or JOHNSON CONTROL HVAC Control system with a work station. These systems have essentially been abandoned and were to have been replaced with a new, current Technology level RELIABLE brand system.

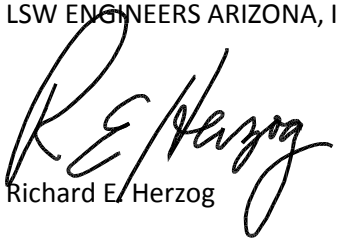
However, the district-wide retrofit HVAC Control System not only has not been installed as proposed, it does not perform many of the standard control actions. At the single Operator Workstation located in the District Maintenance Office, we observed nine (9) screens of communication and server errors. In addition, we observed and the facility personnel reported, many mechanical systems/equipment are not under any control and in some cases does not operate. Outside air dampers are motorized, however, they are all 100 % open continuously. The heat exchanger at the Balsz School does not appear to be operational (under control).

Reportedly, the heat exchanger at the Brunson-Lee School will operate manually only. The system was to be "web-based" but it appears it is not. Reportedly, the system was commissioned in November of 2012. We have advised Mr. Chancey to prepare a Warranty Claim as the proposal indicates a 5-year Warranty.

We are available to assist the District in meeting with the Performance Contractor and resolving this matter including an Acceptance Demonstration once the system is installed as proposed and is fully operational. This would also allow us to refine our Assessments.

Sincerely,

LSW ENGINEERS ARIZONA, INC.



Richard E. Herzog

REH/gs

Attachments: Mechanical and Plumbing Assessment General/Overall Items

BALSZ SCHOOL DISTICT Maintenance and Transportation Center 4825 E. Roosevelt Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1996)	
Component	Estimated % Life Cycle Remaining
Unit Heaters	Out of Service
AC Units	20%
Exhaust Fans, unless otherwise noted	20%
HVAC Control System	0%*
Plumbing Fixtures, except as noted below	20%
Water Heater (3 years old)	80%
Domestic Water Main Backflow	20%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT Maintenance and Transportation Center 4825 E. Roosevelt Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1996)
• The Janitor Closet mop sink and the floor mounted sink in the Bus Service Bay should be replaced.
• The domestic water backflow prevention program needs to be reviewed. Numerous hose bibbs do not have vacuum breaker protection.
• There does not appear to be a sand and oil interceptor for the drainage from the bus maintenance bays.

BALSZ SCHOOL DISTICT District Administration Building 4825 E. Roosevelt Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1996)	
Component	Estimated % Life Cycle Remaining
AC Units	20%
Exhaust Fans, unless otherwise noted	20%
HVAC Control System	0%*
Plumbing Fixtures, except as noted below	20%
Water Heaters, General	20%
Domestic Water Main Backflow	20%

*See Cover Letter

Notes:

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BALSZ SCHOOL DISTICT District Administration Building 4825 E. Roosevelt Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1996)
• The circulating pump at the east water heater appears to be out of service, and in need of replacement.
• The refrigerant pipe insulation and the exposed thermostat wiring in the Mechanical Yard are in need of maintenance. Replace insulation and install wiring in conduit.
• At the Office fan coil units, secondary drain pans and PVC pipe drain piping has been installed in a “make-shift” manner; the piping is not supported/anchored, etc.

BALSZ SCHOOL DISTICT Brunson-Lee School 1328 N. 48th Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1996)	Estimated
Component	% Life Cycle Remaining
Central Plant, except as noted below	80%
Cooling Towers (1 Year Old)	90%
Office & Classroom Fan Coil Units	50%
All other AHU's	50%
Exhaust Fans, unless otherwise noted	50%
Kitchen Exhaust Hood MUA, Heating & Cooling	0%
Air Curtains; "Fly Fans"	50%
HVAC Control System	0%*
Plumbing Fixtures	50%
Domestic Water Main Backflow	80%
Water Heaters	80%
Water Softeners	80%
Grease Trap	80%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT Brunson-Lee School 1328 N. 48th Street Mechanical and Plumbing Assessment Specific Items/Conditions (Original Construction 1996)
• We observed excessive “air noise” at numerous fan coil units, in the Music Room for example. We recommend the HVAC Air Balance at these units be re-visited.
• In the Central Plant, the make-up water backflow device is leaking and should be replaced.
• Central Plant - The refrigerant leak detection and emergency ventilation system control is not operational.
• The kitchen hood exhaust fan is operational. However, the make-up air heating and cooling is not operational.
• Roofs - It appears the original, black steel natural gas piping was not painted or otherwise protected, and it has rusted to the point failure is eminent.
• One of the two (2) large rooftop gas pack units is out of service, repairs underway.

BALSZ SCHOOL DISTICT Orangedale School 5048 E. Oak Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1962/Last Remodel 1996)	Estimated
Component	% Life Cycle Remaining
Central Plant	20%
Chiller & Cooling Tower & Heat Exchanger (Installed 1998)	30%
Thermal Storage	20%
Remote Chiller, Admin Building	90%
Office & Classroom Fan Coil Units	20%
Gym AC Units (Installed 2003)	50%
Exhaust Fans, unless otherwise noted	20%
Kitchen Exhaust Hood MUA, Heating & Cooling	0%
Air Curtains; "Fly Fans"	20%
HVAC Control System	0%*
Plumbing Fixtures, except as noted	20%
Domestic Water Main Backflow	20%
Water Heaters, General	See Page 18
Water Heaters, Kitchen	20%
Water Softener	20%
Grease Trap	20%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT Orangedale School 5048 E. Oak Street Mechanical and Plumbing Assessment Specific Items/Conditions (Original Construction 1962/Last Remodel 1996)
• Central Plant - The refrigerant leak detection and emergency ventilation system control is not operational
• The kitchen hood exhaust fan is not operational, including the make-up air heating and cooling.
• At several randomly selected locations, the hand wash stations in Student Restrooms were not operational.
• At the Cafeteria entrance doors, we observed excessive positive air flow. At the roof, we observed “ballooning” of the new membrane roofing and we could not locate relief air provisions. Short term, we recommended one AC Unit be de-activated, to prevent damage to the new roof and long term we recommend the HVAC Air Balance at these units be re-visited and that relief air provisions be installed. Note: Several existing sky lights are available for conversion to relief air units.
• In the Central Plant, the closed system pot feeders are out of service, and in need of replacement.

BALSZ SCHOOL DISTICT Griffith School 4505 E. Palm Lane Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1955/Last Remodel 1996)	Estimated
Component	% Life Cycle Remaining
Central Plant	20%
Thermal Storage	20%
New Chiller	100%
Office & Classroom Fan Coil Units	20%
Exhaust Fans, unless otherwise noted	20%
Kitchen Exhaust Hood MUA, Heating & Cooling	0%
Air Curtains; "Fly Fans"	20%
HVAC Control System	0%*
Plumbing Fixtures	20%
Domestic Water Main Backflow	20%
Water Heaters, General	See Page 18
Water Heaters, Kitchen	? See Below
Water Softener	20%
Grease Trap	20%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT Griffith School 4505 E. Palm Lane Mechanical and Plumbing Assessment Specific Items/Conditions (Original Construction 1955/Last Remodel 1996)
• The kitchen hood exhaust fan operates with only manual control and only at low speed. The make-up air heating and cooling is not operational.
• The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.
• In the Central Plant, the closed system pot feeder is out of service and in need of replacement.

BALSZ SCHOOL DISTICT Balsz School 4309 E. Belleview Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1968, Last Remodel 1998)	Estimated
Component	% Life Cycle Remaining
Central Plant	30%
Thermal Storage	20%
Office & Classroom Fan Coil Units	30%
Exhaust Fans, unless otherwise noted	30%
Kitchen Exhaust Hood MUA, Heating & Cooling	0%
Air Curtains; "Fly Fans"	30%
HVAC Control System	0%*
Plumbing Fixtures	30%
Water Heaters, General	See Page18
Water Heaters, Kitchen	See Below
Domestic Water Main Backflow	30%
Water Softeners	30%
Grease Trap	30%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT Balsz School 4309 E. Belleview Street Mechanical and Plumbing Assessment Specific Items/Conditions (Original Construction 1968, Last Remodel 1998)
• The kitchen hood exhaust fan is not operational, including the make-up air heating and cooling.
• The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.
• Central Plant - One of the refrigerant leak detection system controls is not operational.
• Central Plant - The heat exchanger is not operational (under control).

BALSZ SCHOOL DISTICT David Crockett School 501 N. 36th Street Mechanical and Plumbing Assessment General/Overall Items (Original Construction 1960/Last Remodel 1998)	Estimated
Component	% Life Cycle Remaining
Central Plant	30%
Thermal Storage	20%
New Chiller	100%
Chilled Water Piping , Cafeteria	0%
Chilled Water Piping, Overall	30%
Office & Classroom Fan Coil Units	20%
Exhaust Fans, unless otherwise noted	30%
Kitchen Exhaust Hood MUA, Heating & Cooling	0%*
Air Curtains; "Fly Fans"	30%
HVAC Control System	0%*
Water Heaters, General	See Page 18
Water Heaters, Kitchen	See Below
Plumbing Fixtures, unless otherwise noted	30%
Domestic Water Main Backflow	30%
Domestic Water Backflow, Secondary; Kitchen, Central Plant, Hose Bibbs	See Below
Water Softeners	30%
Grease Trap	30%

*See Cover Letter

Notes:

1. The Life Cycle % is the ASHRAE 20 year life expectancy, factored with the observation of the condition of the equipment.

2. 0% Life Cycle defines equipment that is not operational and/or in various stages of repair. Once repaired, their % Life Cycle will revert to that at least that noted for like equipment.

BALSZ SCHOOL DISTICT David Crockett School 501 N. 36th Street Mechanical and Plumbing Assessment Specific Items/Conditions (Original Construction 1960/Last Remodel 1998)
• The kitchen hood exhaust fan operates with only manual control and only at low speed. The make-up air heating and cooling is not operational.
• The kitchen water heater manufacturer's representative reports the water heaters are piped incorrectly. In addition, these water heaters are set at 135 degrees to meet the dishwasher requirement but the same 135 degree water was observed at the hand wash sinks which represents a scald hazard.
• The Kitchen backflow device is leaking and should be replaced.
• Room 409 - The small water heater is not operational and must be replaced.
• Gym - The water heater circulating pump is not operational and must be replaced.
• Gym Lower Roof - One of the exhaust fans is not operational.
• The Janitor Closet mop sinks should be replaced.

BALSZ SCHOOL DISTICT Mechanical and Plumbing Assessment General/Overall Items/Conditions
• Painting of Mechanical & Plumbing equipment, condensing water piping and supports/anchors is now in need to preserve or extend the life expectancy and control eventual failure.
• Repair of damaged pipe and equipment insulation, at nearly every site, is now needed to preserve or extend the life expectancy and control eventual failure.
• Except for perhaps the Brunson-Lee School, sanitary caulking at water closets, urinals, sinks and drinking fountains needs to be installed/replaced.
• Reportedly, approximately 12 small water heaters, at various schools have failed and need to be replaced
• Reportedly, the coil cleaning, as the result of the delayed filter replacement and the subsequent damage to coils, is well underway, and it is estimated to be 20% completed.
• Except for the Brunson-Lee School, the Janitor Closet mop sinks should be replaced.